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Notice of Allowability	Application No.	Applicant(s)	
	10/522,638	SYMS, RICHARD	
	Examiner	Art Unit	
	Phillip A. Johnston	2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--
 All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to preliminary amendment filed 10-11-2006.
2. ☒ The allowed claim(s) is/are 1-3 and 6-39.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input checked="" type="checkbox"/> Notice of Refererices Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date <u>10-24-2005</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

Detailed Action

1. This Office Action is submitted in response to the preliminary amendment filed 10-11-2006, wherein claims 1,3,6-10,12,14-16,22-26,28,30,32,33,35, and 37 have been amended and claim 4 has been canceled. Claims 1-3, and 5-39 are pending.

Examiners Amendment

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Monique Morneault on 1-5-2007. Changes made below in the form of additions are underlined, and changes in the form of deletions are enclosed in brackets [].

The Claims are amended as follows;

-- 1. (Currently amended) An integrated mass spectrometer device formed from two multilayer wafers, each wafer having a first layer, second layer and having an insulating layer provided therebetween, the device having a plurality of electrode rods and a plurality of planar electrodes, the electrodes being formed in the first layer and electrode rods being provided in the second layer, the second layer being dimensioned to receive the electrode rods, the rods being retained in contact with the second layer by the provision of at least one [resilient member] silicon spring formed in the second layer. --

-- 32. (Currently amended) A mass spectrometer array comprising a plurality of devices, each device being an integrated mass spectrometer device formed from two multilayer wafers, each wafer having a first layer, a second layer and having an insulating layer provided therebetween, the device having a plurality of electrode rods and a plurality of planar electrodes, the electrodes being formed in the first layer and electrode rods being provided in the second layer, the second layer being dimensioned to receive the electrode rods, the rods being retained in contact with the second layer by the provision of at least one [resilient member] silicon spring formed in the second layer. --

-- 35. (Currently amended) A method of forming a mass spectrometer comprising the steps of:

a) providing a first and second wafer, each wafer having at least three layers, a first layer, a second layer and an insulating layer provided therebetween,

b) on each wafer, etching an inner and outer pattern on the first and second layers respectively, the inner and outer patterns defining components for the spectrometer, the first layer of each wafer having at least one electrode formed thereon, the second layer of each wafer being dimensioned to receive at least one electrode rod, the second layer having at least one [resilient member] silicon spring formed therein the at least one [resilient member] silicon spring being adapted to retain a rod in contact with the second layer

c) subsequently bonding the two patterned wafers together so as to form a multilayer stack

d) inserting at least one electrode rod into the second layer of each wafer of the device. --



Allowable Subject Matter

3. Claims 1-3, and 6-39 are allowed

Examiner's statement of reasons for allowance

The following is an examiner's statement of reasons for allowance:

4. Claims 1,32, and 35 are allowed because prior art fails to show a miniaturized mass spectrometer formed from two multilayered wafers having a plurality of electrode rods and planar electrodes where the electrode rods are retained in contact with the second layer of one wafer by at least one silicon spring formed in the wafers second layer.

It is noted herein that the prior art discloses the use of electrode rods in miniaturized mass spectrometers formed from two multilayered wafers (USPN

6,465,792 to Baptist; USPN 5,386,115 to Friedhoff et al), and the prior art discloses the use of silicon springs for providing resilient contact structures for microelectronic components (USPN 6,422,831 to Khandros). However, there is no motivation to combine these teachings.

5. Claims 2,3,6-31,33,34, and 36-39 are allowed by virtue of their dependency upon allowed claims 1,32, and 35.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6. Any inquiry concerning this communication or earlier communications should be directed to Phillip Johnston whose telephone number is (571) 272-2475. The examiner can normally be reached on Monday-Friday from 6:30 am to 3:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiners supervisor Drew Dunn can be reached at (571) 272-2312. The fax phone number for the organization where the application or proceeding is assigned is 571 273 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PJ
January 3, 2007



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Primary Patent Examiner
Art Unit 2881